

CLAIMS

1. A method for ablating a target object with a laser beam, the method comprising:

an irradiation step of irradiating a reference object having a first curved surface shape with the laser beam under laser irradiation conditions determined to form a second curved surface shape on the reference object, the first curved surface shape being approximate to a curved surface shape of the target object,

a measurement step of measuring a third curved surface shape on the reference object which has actually been formed by the laser irradiation, and

an analysis step of determining a discrepancy between the second curved surface shape and the third curved surface shape.

2. The ablation method according to claim 1, further comprising a correction step of correcting control data for a laser irradiation apparatus based on a result of the analysis.

3. The ablation method according to claim 1, further comprising:

an input step of inputting ablation data for changing the curved surface shape of the target object into a desired surface shape, and

a correction step of correcting the inputted ablation data based on a result of the analysis;

4. The ablation method according to claim 1, further

comprising a display step of displaying a result of the analysis.

5. The ablation method according to claim 1, wherein the target object includes a cornea, and a corneal shape measurement apparatus is used in the measurement step.

6. The ablation method according to claim 1, wherein the reference object has a known ablation rate relative to an ablation rate of the target object.

7. An apparatus for ablation comprising:

measurement data input means for inputting data obtained by irradiating a reference object having a first curved surface shape with a laser beam under laser irradiation conditions determined to form a second curved surface shape on the reference object and by measuring a third curved surface shape on the reference object actually formed by the laser irradiation, wherein the first curved surface shape is approximate to a curved surface shape of a target object, and

analysis means for determining a discrepancy between the second curved surface shape and the third curved surface shape.

8. The apparatus for ablation according to claim 7, the apparatus including a laser irradiation apparatus comprising:

an irradiating optical system for irradiating the object with the laser beam, and

control means for controlling an irradiation

position and irradiation time of the laser beam emitted by the irradiating optical system, and further comprising correction means for correcting control data for the control means based on a result of the analysis.

9. The apparatus for ablation according to claim 7, further comprising:

ablation data input means for inputting ablation data for changing the curved surface shape of the target object into a desired surface shape, and

correction means for correcting the inputted ablation data based on the analytical result.